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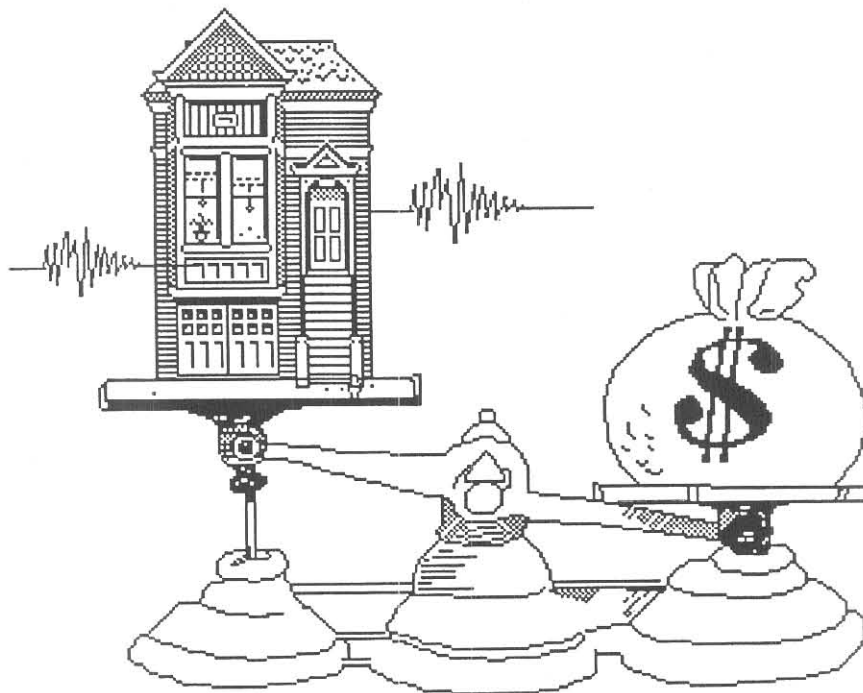


California Office of
Emergency Services

*Bay Area Regional
Earthquake
Preparedness Project*

Seismic Retrofit Incentive Programs

A Handbook for Local Governments



SEISMIC RETROFIT INCENTIVE PROGRAMS

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A special thank you to all of the municipal employees that took time to answer our surveys, return our phone calls, review our work and meet with us personally. We truly appreciate the interest you showed in this project and all your efforts on our behalf.

TABLE OF CONTENTS

Preface.	1
Foreword.	3
Executive Summary.	7
Perspective.	17
Case Studies.	19
City of Fullerton	19
City of Long Beach	25
City of Palo Alto	35
City of Sonoma	41
City of Torrance	47
City of Upland	53
City of West Hollywood	59
Program Highlights.	65
Town of Arroyo Grande	66
City of Berkeley	67
City of Inglewood	68
City of La Verne	69
City of San Diego	70
City of San Jose	71
City of San Mateo	73
City of Vacaville	74

TABLE OF CONTENTS (Continued)

Using Zoning as Incentive to Retrofit.....	75
Types of Incentives	75
Density/Intensity Bonuses.....	76
Transfer of Development Rights (TDR)	76
Reduction in Development Standards	77
Relief from Nonconforming Provisions	77
New Occupancy of a URM or Other Potentially Hazardous Buildings.....	78
Example of an Incentive Program for Seismic Hazard Upgrading Using Zoning Incentives	79
Local Government Financing Options.	81
The Scope of the Financing Problem: Attainability, Affordability and Economic Incentive	81
Bank Lending	84
Some Sources of Funds	85
State and Federal Programs.	87
California Housing Rehabilitation Program	88
Community Development Block Grants	91
The Home Program	96
The Small Business Administration (SBA)	98

TABLE OF CONTENTS (Continued)

Local Government Financing Options (continued)

Bond Programs.	99
General Obligation Bonds	100
Marks-Foran Residential Rehabilitation Act	101
Marks Historic Bond Act	102
Mello-Roos Community Facilities District	104
Public Purpose Bonds	106
Special Assessment District	107
Tax Increment Financing <i>or</i> Tax Allocation Bonds	110

California State Seismic Legislation. 111

The URM Law	111
Enforcement of Local Ordinances	112
Concerns of Local Jurisdictions: Gift of Public Funds, Separation of Church and State, and Liability	112
Special Assessment, Mello-Roos and General Obligation Bonds	114
Redevelopment Agencies	115
State Reaching Out Directly to Property Owners	116
Future Directions in Hazard Mitigation	117

Liability Implications and Considerations. 121

Background	121
The Analysis	122

TABLE OF CONTENTS (Continued)

Liability Implications and Considerations (continued)

Private Owner Liability	122
Local Government Liability	123
The "Act of God" Defense	124
Economic Issues Associated with Liability Exposure	125
Authority of Local Governments to Conduct Surveys and Require Retrofitting	125

Contacts	127
----------------	-----

Index	131
-------------	-----

Exhibits to Case Studies (located with their respective case studies)

City of Fullerton	F-1
-------------------------	-----

- Seismic Loan Program - Loan Program Guidelines

City of Long Beach	LB-1
--------------------------	------

- Sample letters to property owners sent over the course of the
financing process

City of Palo Alto	PA-1
-------------------------	------

- City of Palo Alto Ordinance #3666

City of Sonoma	S-1
----------------------	-----

- City of Sonoma Ordinance #90-15
- *A&E Grants for Seismic Upgrading and Permit Fee Waiver Program*
- Sample A&E Reimbursement Grant Application
- About City of Sonoma's Seismic Upgrading Program

TABLE OF CONTENTS (Continued)

Exhibits to Case Studies (continued)

City of Upland	U-1
----------------------	-----

- Town Center Construction Loan Program
- Town Center Commercial Rehabilitation Rebate Program
- Excerpts from Commercial Rehabilitation Rebate Program Application Package:
 - + Cover Letter
 - + Final Application
 - + Program Guidelines
 - + Program Flow Chart
 - + Facade Improvement Guidelines
 - + Owner's Participation Agreement
 - + Selection Criteria for Engineering Services
 - + Directive for the Processing of Plans for Structural Modifications of Unreinforced Masonry Buildings

Charts and Tables

"Probabilities of Large Earthquakes Occurring in Three California Regions"	3
"Retrofit Incentive Programs: A Quick Look"	10
"Program Highlights: A Quick Look"	14
City of Long Beach: Value-to-Lien Ratios	31
City of Palo Alto: Program Results	39
City of Sonoma: Timing of Implementation	42
City of Torrance: Value-to-Lien Ratios	51
California Housing Rehabilitation Program: Funding Available	88
Community Development Block Grants	93

PREFACE

1

The financing of hazard mitigation continues to be one of the more difficult impediments to creating a seismically safe environment for Californians. Both State and local governments have undertaken mitigation utilizing a variety of funding mechanisms.

This *Handbook* grew out of a research project initiated by the California Seismic Safety Commission. That project explored the feasibility of utilizing Special Assessment district and other bond funding mechanisms available to most municipalities to finance retrofit of privately owned seismically hazardous structures. Making these financing tools available to private building owners will help local governments reduce or eliminate the hazard of potential collapse posed by these buildings.

Funding for the research and development of this document was provided by the California Seismic Safety Commission, the Bay Area Regional Earthquake Preparedness Project of the Governor's Office of Emergency Services, and the Federal Emergency Management Agency, (FEMA) through the National Earthquake Hazards Reduction Program. Jane Bullock, Chief, Lead Agency Unit, Office of Earthquakes and Natural Hazards, FEMA, was especially supportive of this effort. The research was designed and conducted by professional staff of the Association of Bay Area Governments.

FOREWORD

3

California is one of the most seismically active States in the U.S. The statistics generated by seismologists are sobering. Over the coming decades variously sized earthquakes can be expected throughout the State, some with catastrophic damage potential. A sample statistic: there is a *90% probability* that either the San Francisco Bay Area or the Los Angeles basin will suffer a magnitude 7 or larger earthquake by the year 2020.

Probabilities of Large Earthquakes Occurring in Three California Regions			
	San Francisco Bay Area	Los Angeles Basin	
		San Andreas Fault	San Jacinto Fault
Earthquake Magnitude	7.0 or larger	7.5 or larger	6.5 to 7.0
Probability of occurring in next 10 YEARS	33%	20-30%	20%
Probability of occurring in next 30 YEARS	67%	60-70%	50%
Sources: U.S. Geological Survey, 1988. Probabilities of Large Earthquakes Occurring in California on the San Andreas Fault: U.S.G.S. Open-File Report 88-398, 92pp. and U.S. Geological Survey, 1990. Probabilities of Large Earthquakes in the San Francisco Bay Region, California: U.S.G.S. Circular 1053, 51pp.			

Each of the many large earthquakes predicted throughout the State can cause billions of dollars in property damage, loss of human life, injury, and disruptions in transportation, communications and utilities.

As one response to this threat, because unreinforced masonry buildings (URMs) are susceptible to serious damage in a major earthquake, in 1986 the State of California adopted what is commonly referred to as "the URM Law." As discussed later in this *Handbook*, this law requires municipalities and counties within the most seismically active zones in the State to identify and create hazard mitigation programs for the unreinforced masonry buildings in their jurisdiction. A number of earthquake experts are now recommending that such identification and mitigation be applied to other seismically hazardous structures as well, including concrete frame structures

lacking ductile connections, poorly designed tilt-up concrete buildings with inadequate roof-wall connections, and older (pre-1960) homes with inadequate strength in their foundations or cripple walls.

The URM Law stopped short of requiring the owners of URM buildings to upgrade their structures. Many communities, however, have taken the initiative and mandated retrofitting of privately-owned URMs and other hazardous buildings. A few jurisdictions have mitigated the URM hazard in their community and more are in the process of doing so. The vast majority of jurisdictions, however, having identified some or all of the hazards, are wondering what they might do to mitigate them. This *Handbook* has been designed with that group in mind.

The Handbook was conceived as part of an effort to find sources of financing for retrofit of privately owned hazardous buildings. The first step in the research process was to survey the 520 cities, towns and counties in California as to the status of their URM retrofit programs, and to gather information on any financial and non-financial incentive programs they may have established. Although more than 35% of those surveyed did respond, very few respondents had implemented any retrofit incentive programs. While the survey did not reveal the pot of gold, we were excited and encouraged by the creativity and resourcefulness of the few jurisdictions which have found ways to leverage or develop financing while promoting retrofitting in their communities. Their efforts are described in this *Handbook*. As you read through the *Handbook*, we urge you to contact the individuals listed so that you may discuss with them their experience and yours.

This *Handbook* introduces the subject of retrofit incentives with PERSPECTIVE, the thoughts of Charles Eadie, former Project Manager of the City of Santa Cruz Redevelopment Agency Downtown Recovery Plan. The heart of the *Handbook* lies in the CASE STUDIES, which describe steps to promote retrofitting taken by jurisdictions throughout California that may serve as models for others. The case studies were selected from responses to our survey. We met with staff at these municipalities to develop the case studies, which include descriptions of these jurisdictions' programs, as well as discussions of their programs' development, the resources they require, and their effectiveness.

For jurisdictions now trying to develop a system for prioritizing their hazardous buildings, we have included the case study of the City of Sonoma, which adopted a mandatory retrofit ordinance that includes an objective and flexible system of establishing time-lines for retrofitting buildings identified as hazardous. The case study of the City of Palo Alto offers a model for those jurisdictions seeking to develop voluntary ordinances, and includes several non-financial incentives. (Note that we did not include a case study describing the Los Angeles Division 88 ordinance. The ordinance is readily available to those who are interested in a copy. If only because of its size, the City of Los Angeles is unique, and the process by which it developed and

is implementing the ordinance is less likely to serve as a model for the majority of cities. For information about the city's program, refer to *Strengthening Unreinforced Masonry Buildings in Los Angeles* by William Spangle Associates; see: **CONTACTS**.)

Financing retrofit projects is always a concern. The case studies of the cities of Torrance and Long Beach offer detailed descriptions of the Special Assessment district bond financings which these cities pioneered as a method of providing funds to owners of seismically hazardous properties. The case study of the City of Upland shows how a small city marshalled resources to provide design cost rebates to owners who retrofit their properties. This case study includes excerpts from the complete and very thorough application package designed by the city.

The City of Fullerton case study demonstrates the use of redevelopment agency funds to effect seismic retrofit through targeted no-interest loans. Finally, the case study of the City of West Hollywood illustrates a multi-faceted approach to financial incentives, including adaptation of the city's rent control ordinance to meet the needs of owners and tenants.

There are several jurisdictions in California which have mitigated the hazard in all their identified URM's. While their success is clearly laudable, their stories have not been included in the *Handbook* because their programs were not applicable in the current environment. (The City of Santa Ana, for example, used a form of bond financing which no longer provides any advantage given subsequent changes in Federal tax laws.)

In addition to the case studies, the *Handbook* contains **PROGRAM HIGHLIGHTS**. As compared with the extensive discussion in the case studies, these are brief write-ups of actions taken by local governments to promote seismic retrofitting in their communities. Names and telephone numbers are provided for readers who would like additional information.

The next two chapters of the *Handbook* discuss the tools which jurisdictions can use in developing programs to promote retrofitting. **USING ZONING AS AN INCENTIVE TO RETROFIT** by Michael Dyett, AICP, discusses ways in which zoning can be used to promote seismic upgrading. The chapter entitled **LOCAL GOVERNMENT FINANCING OPTIONS** outlines potential sources of funding.

A description of the URM Law and of recent legislation comprises **CALIFORNIA STATE SEISMIC LEGISLATION**, which includes a discussion of the direction in which the State of California is headed as it continues to address the issue. **LIABILITY IMPLICATIONS AND CONSIDERATIONS** discusses the question of liability in the event of an earthquake. Finally, we have also included for easy reference a list of the **CONTACTS** whose names appear elsewhere in the *Handbook*.

In researching this *Handbook* we have learned a few basic lessons which we would like to share with our readers:

***Developing an approach to seismic retrofitting is essential, difficult and time-consuming.** It requires the dedicated attention over a long period of time of at least one staff member, and the guidance and complete support of the elected body of the jurisdiction. Understanding the nature and scope of the problem is an important first step.

***Successful programs require the active participation of the community.** The jurisdiction must work closely with property owners, tenants, the business community, historic preservationists, and all other interested parties to ensure that the program developed is perceived to be fair, reasonable, and workable. Education, before, during and after program development, is critical to its success.

***There is no such thing as a model program.** Each jurisdiction is unique in its circumstances and its resources, and each must develop its own approach.

We wish you good luck and hope this *Handbook* will be helpful as you search for solutions to the problem of retrofitting privately-owned seismically hazardous structures.

California is one of the most seismically active States in the U.S. Over the coming decades, earthquakes of varying intensity can be expected throughout the State. Yet, the State is replete with buildings, numbering in the thousands, which are not ready to withstand the expected shock. The potential for great loss of life, injury and property damage is immense.

Most local jurisdictions are aware of the need to address this issue. Since the 1986 adoption of the "URM (Unreinforced Masonry Building) Law" in California, municipalities large and small have devoted their limited resources to identifying URM buildings in their jurisdiction that are susceptible to serious damage in the event of a major earthquake, and developing mitigation programs as required by the law. A number of earthquake experts are now recommending, and several jurisdictions have begun, identification and mitigation of other seismically hazardous structures such as concrete frame structures lacking ductile connections, poorly designed tilt-up concrete buildings with inadequate roof-wall connections, and older (pre-1960) homes with inadequate strength in their foundations and cripple walls. However, many of the jurisdictions which are diligently identifying the hazards are at a loss as to how they might encourage owners to undertake needed retrofitting projects.

This *Handbook* is designed to help local jurisdictions develop their own seismic retrofit incentive programs. Using both extensive case studies and abbreviated descriptions, it offers the reader a chance to examine the steps which 17 cities have taken to address these issues. The *Handbook* also provides a comprehensive list of financing options. To give readers a context for their program development, the *Handbook* includes both a discussion of California's legislative activity in this area and an analysis of liability considerations.

The following is a chapter by chapter summary of the contents of the *Handbook*, with conclusions drawn as appropriate.

PERSPECTIVE

The **PERSPECTIVE** section of this Handbook introduces the subject of retrofit incentives with the thoughts of Charles Eadie, currently the City Planner of the City of Watsonville. Prior to joining Watsonville's staff Mr. Eadie served as Project Manager of the City of Santa Cruz Redevelopment Agency Downtown Recovery Plan. Mr. Eadie acknowledges that decisions about retrofit requirements and financing are extraordinarily difficult, both for owners and for public officials. Santa Cruz struggled with the issue in the mid 1980's, in the end leaving the decision to retrofit up to individual owners. Today, after the 1989 Loma Prieta earthquake, Eadie

says "nearly every property owner wishes he or she had done more." Eadie lists the following principles, derived from his own experience and that of the City of Santa Cruz:

1. Never forget that you will have an earthquake
2. A retrofit will save lives, including possibly your own.
3. Any amount of retrofit is an advantage. The more you do the better. Even minor improvements can make the difference between repair and ruin.
4. A community unwilling to accept small architectural compromises of historical purity (through retrofit) risks major irreversible loss of historic character.
5. The disruption and cost of retrofit are minor compared to the catastrophic costs of doing nothing.
6. Recovery happens sooner when there is retrofitting.
7. Don't wait.

CASE STUDIES

The heart of the *Handbook* lies in the CASE STUDIES, which are outlined in the table entitled *Retrofit Incentive Programs: A Quick Look*. The cities chosen to be the subjects of the case studies were selected from responses we received to a survey we sent to 520 cities, towns and counties in the State of California. Each case study was developed in consultation with the local jurisdiction, and includes a description of the jurisdiction's incentive programs as well as discussions of the programs' development, the resources they require, and their effectiveness. Neither the table on the following page nor the paragraphs below can do justice to the case studies. We urge you to read the case studies themselves and, most importantly, to get in touch with the contacts listed throughout the *Handbook* so that you can learn first-hand how their experience can benefit your unique circumstance.

THE CITY OF FULLERTON

The City of Fullerton offers two-tiered, no-interest loans to owners who retrofit their buildings. The first tier comprises a deferred loan due on sale or transfer of title of the structure. The second tier, which can cover up to 50% of the remaining cost of retrofit, is payable in principal only over a ten-year period, with repayment starting two years after the project is completed. These loans are funded and offered by the city's redevelopment agency, and are very much integrated into the city's overall redevelopment plan. Approximately 114 of the city's 125 URM's are in the process of or have completed their retrofitting. Fullerton's success is in large part the result of the close working relationship

between the various departments involved. Note that in addition to its URM program, Fullerton has adopted and achieved full compliance with a tilt-up building retrofit ordinance.

THE CITY OF LONG BEACH

The City of Long Beach is renowned for issuing the first large Special Assessment bonds to finance retrofit of privately-owned hazardous structures. This bond issue made financing available, at an interest rate of 11.3%, to URM owners who joined the Special Assessment district. Copies of correspondence between the city and the owners over the course of the district's development are included as exhibits to the case study. Of the 506 URMs in the city at the time of the bond financing, about one quarter were included in the assessment district. About forty owners who did not participate in the first issue have requested that the city form a second assessment district. The City of Long Beach and its financing team learned many valuable lessons from their pioneering experience; perhaps the most important is the need to ensure that property owners thoroughly understand the program, the nature of their commitment under the program, and the roles the city does and does not play in the program. In retrospect, the city found education of the participants to be the most crucial, and the most difficult, part of implementing a Special Assessment financing program.

THE CITY OF PALO ALTO

The ordinance developed by the City of Palo Alto is often used as a model by those jurisdictions seeking to make retrofitting voluntary rather than mandatory. A copy of the ordinance is included as an exhibit to the case study. Palo Alto is also well known for offering an exemption from zoning requirements to owners considering retrofitting. While retrofitting is voluntary, the city does require owners of hazardous buildings to submit detailed engineering reports describing the potential for damage in the event of an earthquake. A lesser known feature of Palo Alto's ordinance requires that owners notify tenants when the report is complete, and that the report be made a matter of public record, attracting the attention of residents and affecting the property's rental and resale values. Palo Alto's approach has resulted thus far in the voluntary retrofit of 22 of the 91 buildings originally identified as hazardous. Interestingly, while the zoning exemption is very highly touted as an incentive, in fact only four projects thus far have requested it. The development of Palo Alto's ordinance took four years. The city learned the hard way that the community must be very much involved in the development of an ordinance if it is to be understood and accepted.

RETROFIT INCENTIVE PROGRAMS: A QUICK LOOK

	FULLERTON	LONG BEACH	PALO ALTO	SONOMA	TORRANCE	UPLAND	WEST HOLLYWOOD
Retrofit Incentives	<ul style="list-style-type: none"> •deferred, no interest loans •matching loans 	<ul style="list-style-type: none"> long-term 11.3% financing 	<ul style="list-style-type: none"> •engineers reports made public •exemption from zoning requirements 	<ul style="list-style-type: none"> •fee waivers •design rebates 	<ul style="list-style-type: none"> •engineering subsidy •long-term 10.75% financing 	<ul style="list-style-type: none"> •design and facade improvement rebates •bank loans 	<ul style="list-style-type: none"> •fee waivers •zoning incentives •rent control modifications •long-term financing
Funding Source	redevelopment agency	special assessment bond issue	no program costs	redevelopment agency	special assessment bond issue	CDBG commercial bank loans	general fund Mello-Roos bond issue
Comments	<ul style="list-style-type: none"> •flexible regarding scope and timing of mandatory retrofitting •offers attractive loans to owners 	largest special assessment financing done for this purpose in California	used by many as a model voluntary retrofit program	<ul style="list-style-type: none"> •creative system for prioritizing buildings •clear, simple informational packet 	<ul style="list-style-type: none"> •first special assessment financing done for this purpose in California 	<ul style="list-style-type: none"> •qualified for CDBG under "Slum and Blight" category •arranged for reduced cost local bank loans (untested) •very thorough application package 	<ul style="list-style-type: none"> •multi-faceted approach •includes rent control modifications allowing accelerated pass-through of retrofit costs •Mello-Roos financing in process
Ordinance Type	mandatory retrofit	mandatory retrofit	mandatory engineering reports	mandatory retrofit	mandatory retrofit	mandatory engineering reports	mandatory retrofit
# URMS	125	560	46	51	50	65	81
Type of URMS	99% commercial 1% residential	90% commercial 10% residential	100% commercial	90% commercial 10% residential	70% commercial 30% residential	100% commercial	80% commercial 20% residential
Population	109,000	430,000	57,000	8,000	133,500	64,000	36,000
1990/91 General Fund Revenues: Fund Balance:	\$42 million \$ 5 million	\$224 million \$ 11 million	\$48 million \$14 million	\$3 million \$1 million	\$93 million \$10 million	\$22 million \$ 8 million	\$34 million \$700,000

THE CITY OF SONOMA

The City of Sonoma has drafted a mandatory retrofit ordinance which we offer as a model for those jurisdictions trying to develop a system for prioritizing hazardous structures. In most mandatory ordinances, the deadline by which owners must retrofit depends upon the priority assigned to their building. To determine a building's priority, Sonoma's ordinance establishes an objective, straightforward point system, explained fully in the case study, using factors such as type and hours of use, number of stories, proximity to public sidewalks and adjacent buildings, and structural adjustments (such as parapet bracing). Buildings may move up or down on the priority scale as they modify any of the factors which led to their original point assignments. Adjusting their priority level allows owners to adjust the timetable for retrofitting, resulting in a very flexible mandate.

The City of Sonoma also provides financial incentives to owners, offering permit fee waivers and architectural and engineering grants for seismic upgrading. The time allowed for complete upgrading ranges from 4 1/2 to twelve years, depending upon the building's priority. Nonetheless, within one year of program implementation, fourteen buildings were in the process of being, or had been, completely upgraded. As in the case of Palo Alto, a lesson which might be learned from the City of Sonoma's experience is the value of being sensitive to the concerns of the community. The ordinance was designed for maximum flexibility, and was thoroughly discussed with and explained to citizens at community meetings. One of the outstanding features of the City of Sonoma's program is how clearly it is articulated in the materials it offers to the community. Copies of that material are included as an exhibit to the case study.

THE CITY OF TORRANCE

The City of Torrance issued the first Special Assessment bond to finance the retrofit of privately owned hazardous structures. The case study of the City of Torrance is included to highlight the fact that a relatively small city (population 134,000) with few URMs (seven parcels in the assessment district) can accomplish the same thing as a larger city such as Long Beach (population 430,000) with many URMs (307 parcels in the district). Torrance in fact pioneered the technique. The Special Assessment program is one of two incentives provided to owners of hazardous structures. The second, a subsidy to pay for engineering analysis, was used by owners of more than half of the city's URMs. To date, Torrance has seen 43 of its 50 identified URMs retrofitted.

THE CITY OF UPLAND

The City of Upland is unusual in two respects. Like other jurisdictions, Upland offers owners rebates for seismic engineering and architectural costs as well as for city fees and for the cost of eligible facade improvements. Upland funded this program with Community Development Block Grant monies. Upland is also unusual in that it was able to convince local banks, at least in principle, to offer loans with favorable terms to owners seeking financing for seismic retrofitting. One of the interesting lessons learned by the city is that convincing just one owner to begin to retrofit reassures and inspires other owners, who then may begin the process themselves thereby encouraging others. The bank financing program was developed in response to owner concerns about the expense and availability of funding. Once they began the retrofit process the owners' fears did not materialize, and in fact to date no one has tested the bank financing program.

Upland is very proud of the spirit of cooperation in which the program was designed and is administered. The city works closely with owners and takes great pains to communicate with its citizens. The materials designed by the city to describe its program are very thorough. Included as exhibits to the Upland case study are the brochures describing the incentive programs and excerpts from the rebate program application package.

THE CITY OF WEST HOLLYWOOD

The City of West Hollywood offers an array of incentive programs to owners seeking to retrofit. Fee waivers play a key role, as do exemptions from zoning requirements. West Hollywood also modified its rent control ordinance, allowing owners to pass through costs to tenants on a somewhat accelerated schedule. As of April 1992, 28 of West Hollywood's 69 hazardous URM's had been retrofitted. West Hollywood also recently established a Mello-Roos district to provide financing, similar to Special Assessment district financing, to owners of 6 hazardous structures. Although many have discussed this type of program in principle, West Hollywood may become the first city to issue Mello-Roos bonds for this purpose. In addition to learning how difficult it is to be a pioneer, West Hollywood has learned that dedicated staff people are key to the success of a city's programs. The menu of programs was developed for the city by a committed staff person who spent much of his time researching the issue and was personally involved with each of the affected owners.

PROGRAM HIGHLIGHTS

In addition to the case studies, the *Handbook* contains short descriptions of steps taken by 8 local governments in the area of seismic retrofit, outlined in the table entitled *Program Highlights: A Quick Look*. The HIGHLIGHTS offer names and telephone numbers for those who would like more information. In addition to offering a menu of suggestions, this section illustrates that any jurisdiction which makes it a priority should be able to offer some kind of incentive to owners of buildings requiring retrofitting.

USING ZONING AS AN INCENTIVE TO RETROFIT

Zoning can be used to promote seismic retrofit, according to Michael V. Dyett, AICP, founder of Blayney Dyett Greenberg, urban and regional planners. These techniques have been used to promote other public purposes, such as affordable housing and historic preservation. Dyett offers the following types of incentives for consideration:

- Density/intensity bonuses
- Transfer of development rights
- Reduction in development standards
- Relief from nonconforming provisions, and
- Restrictions on new occupancy of a potentially hazardous building

These incentives are discussed in this chapter. To illustrate their use, Dyett offers an example of an incentive program for seismic hazard upgrading using these zoning incentives.

PROGRAM HIGHLIGHTS: A QUICK LOOK

Town of Arroyo Grande	<ul style="list-style-type: none"> (1) Flexible with its deadline for compliance (2) Offers reduced permit fees (3) Charges fees based on actual costs incurred by city (4) Allows continuance of non-conforming uses (5) Waives other aspects of updated zoning regulations
City of Berkeley	<ul style="list-style-type: none"> (1) Imposes 1/2% transfer tax on property sales with proceeds used to retrofit the structure (2) Waives permit fees (3) Posts clearly visible warnings
City of Inglewood	<p>Offers two options for reimbursement:</p> <ul style="list-style-type: none"> (1) Up to \$1000 for plans plus 25% of construction costs or (2) Up to \$3000 for plans plus 50% of cost above \$3000 plus city fees
City of La Verne	<ul style="list-style-type: none"> (1) Offers up to 50% grant to cover engineering and construction costs
City of San Diego	<ul style="list-style-type: none"> (1) Voluntarily reviewed the URM situation in the community (2) Appointed City Manager's Committee on seismic retrofit (3) Requires that property owners may have to retrofit a structure when it changes use or increases occupancy
City of San Jose	<ul style="list-style-type: none"> (1) Exempts permit fees (2) Offers design grants (3) Forming Special Assessment district to provide bond financing (4) Developed two grant programs (5) Developing tenant assistance program (6) Hired one individual to serve as full-time liaison with URM owners and community
City of San Mateo	<ul style="list-style-type: none"> (1) Simplified LA model by creating two hazard categories and changing time limits (2) Ties some storefront improvements to retrofit projects (3) Provides grants and loans
City of Vacaville	<ul style="list-style-type: none"> (1) Offers 3%, 25-year loans for seismic retrofit and tenant improvements (2) Offers facade loans

LOCAL GOVERNMENT FINANCING OPTIONS

In recognition of the fact that no incentive for retrofit seems to work quite as well as money, we have attempted to discuss both the existence of funding and its accessibility. This section provides legal citations, background information and contacts for the following funding programs:

- California Housing Rehabilitation Program
- Community Development Block Grants
- HOME Program
- Small Business Administration
- General Obligation Bonds
- Marks-Foran Residential Rehabilitation Act
- Marks Historic Bond Act
- Mello-Roos Community Facilities District
- Public Purpose Bonds
- Special Assessment Districts
- Tax Increment Financing *or* Tax Allocation Bonds

Not all of the sources of funds we have outlined have actually been used to finance seismic retrofitting of privately owned buildings. We surveyed the many different Federal and State funding sources and described those which have been used successfully for this purpose or which seem to be potential sources. Whenever possible, we have included contacts who should be able to answer questions or provide additional information. We hope that communities are able to access some of the as yet untapped funding sources to finance seismic retrofit projects.

CALIFORNIA STATE SEISMIC LEGISLATION

This section describes the recent history of California legislation relating to seismic hazard reduction, and describes how such legislation might affect cities and counties across the State, with particular attention paid to legislation that directly affects a jurisdiction's ability to provide financial assistance to owners of seismically hazardous structures. The discussion examines legislation pertaining to bond-related options such as Special Assessment Districts, Mello-Roos Districts and General Obligation Bonds. It also discusses redevelopment agencies as financing vehicles and describes ways in which the State has attempted to reach out directly to property owners.

This section also contains a short discussion of some issues that are often raised by local officials considering financial incentive programs. Addressed are concerns about private owners being granted a "gift of public funds," the question of whether assistance to finance the retrofit of religious structures is a violation of the separation of church and State, and the question of liability, an issue discussed in more detail in the next chapter.

This section, of necessity, provides only a quick overview of the most recent seismic retrofit-related legislation. The State of California Seismic Safety Commission is a good source of additional information.

LIABILITY IMPLICATIONS AND CONSIDERATIONS

Liability in connection with the issue of retrofitting can be viewed as a double-edged sword. Potential liability can be a disincentive for retrofitting or an incentive for taking action, depending upon how it is viewed. Tort liability is discussed in this section by Jeanne Perkins of the Association of Bay Area Governments and Kenneth Moy of Moy & Lesser. There are, as yet, no appellate court decisions on this issue and therefore no legal precedents. However, the authors conclude that it is highly likely, under the appropriate circumstances, that liability could be assigned to a private owner. Addressing the hazard under the guidance of experts will significantly lessen that likelihood. Public agency liability with respect to private buildings is not large and will not increase as a result of its activities in identifying and abating hazardous buildings.

There is nothing easy about the decision to retrofit old buildings. Retrofit is costly, time-consuming and disruptive to tenants and building owners. It changes the economic calculation in terms of rent needed to pay off the investment, creating hardships. It can pose architectural, engineering and logistical challenges. It can affect the historic integrity of a building.

What is doubly difficult is that the benefit is easy to discount. All the costs and hardships are immediate, yet the spectre of an earthquake is an abstraction, something that seems remote, far off in the future. People acknowledge the certainty of future earthquakes but assume that it will not happen to them.

These factors combine to make decisions about retrofit requirements and financing gut-wrenching and difficult. No one knows how, when or with what force an earthquake will strike any particular city. The odds favor the politician and building owner who assume that the earthquake won't strike during their term of office or their tenure as owner.

Unfortunately for Santa Cruz, the 1989 Loma Prieta Earthquake forever tagged the town as another grim lesson about the final and irretrievable costs of discounting long term benefits for short term gain. Three deaths, the loss of 34 downtown buildings, the end of a beloved historic district and the beginning of an arduous struggle for economic and community recovery was the steep price Santa Cruz paid to join the historic landscape littered with lessons begging to be learned.

In the mid 1980s the Santa Cruz community struggled with the issue of retrofit. After much controversy the decision was left to individual property owners because of the high short-term costs and lack of financial resources available.

Today nearly every property owner wishes he or she had done more. Many are thankful for any little bit they did.

A furniture store owner says he owes his life (and those of several others) to a minor retrofitting he did as an afterthought in conjunction with a reroofing. He still has nightmares thinking how close he came to not anchoring the roof.

Another owner of a small historic commercial building points to a redwood beam and some bracing he had put in his basement in the late 1970s on the advice of his contractor. Without those relatively minor additions, his building would have collapsed under the weight of the tons of brick from a neighbor's parapet. Instead he is repaired and back in business.

A partially completed retrofit of the historic Cooperhouse was enough to prevent total collapse of that building but not to save it. Still, the owner considers every penny of the

thousands he spent to be a worthwhile investment because of the lives that were saved.

For many businesses, access to their building after the earthquake was critical to their recovery. Access was a function of damage. Damage was a function of retrofit. Fifteen minutes of access, or no access at all, was the fate of many whose buildings had no retrofit and were most unsafe. They never retrieved their files, their records, their merchandise. For others, all inventory was recovered, including irreplaceable personal and collector's items.

In 1992, three years after Loma Prieta, many Santa Cruz building owners are still sitting with vacant lots. They face crushing economic realities. Lacking any retrofit, their buildings had been damaged beyond repair. Searching for elusive financial backing to rebuild, they sometimes speak with remorse about the relative pittance it would have cost for the proverbial "ounce of prevention."

Meanwhile, grand reopenings have taken place in several buildings which had retrofits (mostly partial) that were enough to render them repairable. For these property owners and businesses, recovery arrived much sooner. And their community, desperately searching for a break, was grateful for their foresight and pre-quake commitment.

If these brief snippets of personal experience could be translated into a set of principles, it would be these:

- Never forget that you will have an earthquake.
- A retrofit will save lives, including possibly your own.
- Any amount of retrofit is an advantage. The more you do the better. Even minor improvements can make a difference between repair and ruin.
- A community unwilling to accept small architectural compromises of historical purity (through retrofit) risks major irreversible loss of historic character.
- The disruption and costs of retrofit are minor compared to the catastrophic costs of doing nothing.
- Recovery happens sooner when there is retrofitting.
- Don't wait.

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